CLAIMS

1. A continuous method for reducing one or more of microorganisms or enzymes in a liquid beer or wine product, said method comprising the steps of:

a) forming a pressurized mixture by

i) combining a pressurized flow of said liquid beer or wine product with a flow of pressurized liquefied carbon dioxide to create a pressurized mixture in a flow state, said carbon dioxide at a pressure sufficient to maintain it in a dense phase and at a temperature which does not freeze said liquid beer or wine product; or

ii) forming a mixture of said liquid beer or wine product with liquid or gaseous carbon dioxide, wherein said carbon dioxide if in the liquid state is at a pressure sufficient to maintain it in a liquid state and at a temperature which does not freeze said liquid beer or wine product, and then pressurizing said mixture;

b) flowing said pressurized mixture through a reaction zone for a sufficient time to reduce at least one of said microorganisms and said enzymes in said liquid mixture;

c) feeding said pressurized mixture from said reaction zone through one or more expansion stages wherein the pressure of said mixture flow is decreased to vaporize the carbon dioxide in said mixture; and

d) applying heat in at least one of said expansion stages to said mixture if necessary, to the extent necessary, to prevent cooling of said carbon dioxide from causing freezing of said liquid product.

2. The continuous method of claim 1 wherein the contact time in step b) is about 30 seconds to about 15 minutes.

3. The continuous method of claim 1, wherein step d) maintains the temperature of said mixture within a range between the freezing temperature of said liquid beer or wine product and about 35°C.

4. The continuous method claim 1 wherein step a) feeds said pressurized flow of said mixture in said reaction zone at a pressure of about 1000 psia.

5. The continuous method of claim 1, wherein step a) comprises forming a mixture of said liquid beer or wine product with liquid or gaseous carbon dioxide, wherein said carbon dioxide if in the liquid state is at a pressure sufficient to maintain it in a liquid state and at a temperature which does not freeze said liquid product, and then pressurizing said mixture.

6. The continuous method of claim 5, wherein in step d) heat is applied to said mixture in at least one of said expansion stages.

7. The continuous method of claim 6 wherein step d) maintains the temperature of said mixture within a range between the freezing temperature of said liquid product and about 35°C.

8. The continuous method of claim 5 wherein step c) feeds said mixture flow through two or more expansion stages to vaporize said liquefied carbon dioxide.

9. The continuous method of claim 5 wherein step a) feeds said pressurized flow of said mixture in said reaction zone at a pressure within a range of about 1500 psia to about 7500 psia.

10. The continuous method of claim 5 wherein step b) maintains said pressurized flow of said mixture in said reaction zone for a duration of from about 30 seconds to about 15minutes.